

## IAGSA Member Self-Assessment Questionnaire

<b>Company Name: Geo Data Solutions GDS</b>	
<b>Location: Laval</b>	
<b>Date of Assessment: January 2018</b>	
<b>Assessment Questionnaire completed by: Saleh Moussaoui, Isabelle D'Amours and Benoit Luneau for Exactair</b>	
<b><u>Key Management Personnel</u></b>	<b><u>Position</u></b>
Saleh Elmoussaoui , GDS	Operation manager
Isabelle D'Amours, GDS	General Manager
Benoit Luneau, Exact Air	Directeur des opérations /Chef Pilote
<b>Total # Employees:</b>	9

<b>Contents</b>		
<b>Section</b>	<b>Description</b>	<b>Page</b>
Planning – All Operations	Planning activities required for all survey operations	2
Operating Standards – All Operations	IAGSA Recommended Practices for all types of operations	5
Towed Geophysical Arrays	IAGSA Recommended Practices for design and operation of Towed Arrays	15
Geophysical Survey Flight Training	IAGSA Recommended Practices for geophysical survey flight training.	18
Overwater and Offshore Operations	IAGSA Recommended Practices for Over Water and Offshore geophysical survey Operations	19
Additional Training Requirements	IAGSA recommended Supplemental Aircrew Training	25
Flight Performance Monitoring	IAGSA Recommendation for Flight Operations Quality Assurance Monitoring	26

Planning – All Operations			
Title	IAGSA Recommendation	Compliance Level	Explanation of Compliance
<b>Survey Planning</b>	The following is a list of IAGSA Recommended Practices which all members should take into account when planning airborne survey operations regardless of type of survey or terrain.		
	Prior to commencing a survey, do you conduct a detailed risk assessment which identifies the safe survey height?	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	Geo Data Solution Project Safety Plan P. 8 Evaluation is made and presented in the survey proposal, including drape calculation.
	Prior to conducting a survey do you establish a crew rotation schedule which considers factors such as remoteness of site, severity of climate, quality of accommodation, food and personal considerations?	<input type="checkbox"/> Always <input checked="" type="checkbox"/> Sometimes <input type="checkbox"/> Never	Rotations are usually agreed upon on a need to basis according to employee needs and aircraft provider.
	Do you have a minimum temperature limit for cold weather operations?	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never <input type="checkbox"/> N/A	For Navajo operations , min -27 °C For King Air operations, min -33 °C

	Do you limit the use of aircraft heaters or air-conditioning in the interest of “clean” data?	<input type="checkbox"/> Always <input checked="" type="checkbox"/> Sometimes <input type="checkbox"/> Never	A/C and electrical heat in the King Air are limited but the bleed air heat is enough even at -33°C
	Do you require the use of oxygen for all aircrew for survey flights or portions thereof conducted above 10,000 feet ASL?	<input type="checkbox"/> Always <input checked="" type="checkbox"/> Sometimes <input type="checkbox"/> Never	If survey required to fly at or above 10 000 feet we will provide oxygen to flight crew member and if flight above 13 000 feet is required, we will provide to all person on board unless the aircraft is pressurized
	Do you have a drug and alcohol policy?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	GDS Employee Guide section 23
	Are aircrew members required to wear long trousers or a flight suit, closed shoes, have gloves available and clothing appropriate for the environmental conditions?	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	GDS Health and Safety document page 2
	For fixed wing surveys, is a risk assessment conducted to determine whether or not	<input type="checkbox"/> Always <input type="checkbox"/> Sometimes	The aircraft flown does not required the flight crew to wear helmet

	helmets should be worn by the flight crew members?	<input type="checkbox"/> Never <input checked="" type="checkbox"/> N/A	
	For helicopter surveys, are the flight crew members required to wear a flight helmet?	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	Pilot
	Are flight crew members paid or given an incentive based upon hours or kilometers flown?	<input type="checkbox"/> Always <input type="checkbox"/> Sometimes <input checked="" type="checkbox"/> Never	GDS contracts pilots based on daily salary, whether flying occurs or not. No production incentive included on contract.
<b>Emergency Response Planning</b>	Do you develop project specific emergency response plans for each project?	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	GDS Project Health and Safety plan, P. 3
	Does your company have an overall crisis management plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	The aircraft operator, Exact air has one called "Plan d'intervention d'urgence" wich mean in English emergency safetay plan.
<b>Flight Following</b>	Do you operate a satellite tracking system on all aircraft?	<input checked="" type="checkbox"/> Always	The Operator of aircrafts installed tracking system in all survey machines and are always working and

		<input type="checkbox"/> Sometimes <input type="checkbox"/> Never	verified by GDS. Tracking password and website indicated in PSP
	Is the position reporting frequency of the tracking system set to 2 minute intervals as a minimum?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	every 2 minutes
<b>Single Pilot Only Surveys</b>	Do you conduct single Pilot Only Surveys (no equipment operator)?	<input type="checkbox"/> Always <input type="checkbox"/> Sometimes <input checked="" type="checkbox"/> Never	On King Air always 2 pilots in survey On Navajo, usually 2 pilots or pilot system operator occasionally.
	If so, does the Pilot have equipment operation duties in addition to those normally associated with flying the aircraft?	<input type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never <input checked="" type="checkbox"/> N/A	
	Are additional risks associated with single pilot only operations detailed in the risk assessment?	<input type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	

		<input checked="" type="checkbox"/> N/A	
Operating Standards			
<b>Minimum safe survey speeds</b>	Are minimum safe survey speeds for single engine aircraft calculated at 130% of clean stall speed (Vs)?	<input type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	n/a We don't operate single engine aircrafts
	Are minimum safe survey speeds for Multi-engine aircraft: 110% of best single engine rate of climb speed (Vyse), or minimum safe single engine speed (Vsse, if published)?	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never <input type="checkbox"/> N/A	Flying speed is standard and fixed in our proposals Navajo 5% drupe 260 km/h (145 knots) King Air 5% drupe 150 knots speed
<b>Minimum Fuel Standard</b>	Is fuel planning for survey flights based upon 110% of planned consumption?	<input type="checkbox"/> Always <input type="checkbox"/> Sometimes <input checked="" type="checkbox"/> Never	VFR flight rules are followed at any time. (30 minutes extra for daytime and 45 minutes for night time). Extra fuel can be added depending on environment and contingencies.
	Is minimum reserve fuel calculated as 30 minutes for fixed wing and 20 minutes for helicopter at normal cruise consumption rates?	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	In remote area we go up to 1 hour fuel reserve when necessary to assure safety. (ExactAir standard)

"SAFETY IN THE AIR BEGINS ON THE GROUND."

	Do planned minimum fuel reserves consider site specific contingencies?	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	Every survey contract is evaluated with possible alternate airport in case of emergency, weather and runway closure to assure a safe landing at destination or alternate with a fuel reserve to assure the safety of every flight.
<b>Flight and Duty Times</b>	Are the following Flight & Duty Times adhered to?		
Single Pilot Operation Maximum Flight Times	A maximum of 8 hours flight time per day.	<input type="checkbox"/> Always <input checked="" type="checkbox"/> Sometimes <input type="checkbox"/> Never	When IFR flights only.
	A maximum of 5 hours flight time on survey per day (excluding transit time)	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	Single pilot operation is limited to one flight a day and airplanes used by ExactAir have 5 hours fuel endurance maximum.
	A maximum of 40 hours flight time in any 7 consecutive day period	<input type="checkbox"/> Always <input checked="" type="checkbox"/> Sometimes <input type="checkbox"/> Never	We are allowed to 60 hours in 7 days but rarely go there.
	A maximum of 100 hours flight time in any consecutive 28 day period.	<input type="checkbox"/> Always	We are allowed to 150 hours in 30 days but rarely go there.

		<input checked="" type="checkbox"/> Sometimes <input type="checkbox"/> Never	
	A maximum of 1000 hours in any consecutive 365 day period.	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	Normally pilot fly around 600 to 700 hours per year maximum.
	If extensions to the single pilot flight times are used has the extension criteria recommended by IAGSA been met?	<input type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never <input checked="" type="checkbox"/> N/A	
Dual Pilot Operations Maximum Flight times	A maximum of 10 hours flight time per day.	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	Dual pilot operation is limited to two flights a day and airplanes used by ExactAir have 5 hours fuel endurance maximum.
	A maximum of 8 hours flight time on survey (excluding transit time).	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	Dual pilot operation are limited to two flights a day and airplanes used by ExactAir have 5 hours fuel endurance maximum.



“SAFETY IN THE AIR BEGINS ON THE GROUND.”

	A maximum of 45 hours flight time in any consecutive 7 day period.	<input type="checkbox"/> Always <input checked="" type="checkbox"/> Sometimes <input type="checkbox"/> Never	60 hrs per 7 days but rarely go there
	A maximum of 120 hours flight time in any consecutive 28 day period.	<input type="checkbox"/> Always <input checked="" type="checkbox"/> Sometimes <input type="checkbox"/> Never	We are allowed to 150 hours in 30 days but rarely go there.
	A maximum of 1200 hours flight time in any consecutive 365 day period.	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	Normally pilot fly around 600 to 700 hours per year maximum.
Maximum Duty Times	The maximum duty time in any one day shall not exceed 14 hours	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	We are allowed to 15 hours but we use it only for unforeseen operational circumstances.
	The pilot shall have a minimum of 2 days rest within a 14 day period. These may be taken separately or together. If taken separately, one day rest shall be defined as 30 consecutive hours free from duty.	<input type="checkbox"/> Always <input checked="" type="checkbox"/> Sometimes <input type="checkbox"/> Never	We respect the 3 days in 30 day period minimum during contract but weather always gives more! Between contracts, pilots are often completely off. We also have the ops. Spec to go 42 days ON with 5 consecutive days off before and after but as said earlier, weather always gives days off.

<b>Emergency Beacon / Radio</b>	Is each aircrew member required to carry on their person essential survival items including: a personal locator beacon means to start a fire, knife and a signal mirror?	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	Aircraft complete survival and first aid kit adapted to the terrain and time of year. As to be verified and noted on GDS Project Safety Plan with each project.
<b>Fuel Quality Control – Storage Tanks</b>	<p>The quality control of the fuel varies considerably at smaller centres. The crew must determine the adequacy of this quality control and take all available means to ensure against boarding contaminated fuel.</p> <p>Is there a procedure in place to ensure that the following checks are required anytime a fuel source is unknown or questionable:</p>		
	Check that Fuel Quality Control Check and Delivery documents are current and available.	<input type="checkbox"/> Always <input checked="" type="checkbox"/> Sometimes <input type="checkbox"/> Never	When conditions permit it
	Check that the fuel servicing vehicle / facility is identified with the fuel type handled.	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	Each pilot checks before refueling and stay with the fuel operator during refueling as describe in the company Operation Manuel
	Check that the facility is clean and maintained.	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	Each pilot check before refueling as describe in the company Operation Manuel

<p>Check that bonding wires and connections are in good condition.</p>	<p><input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never</p>	<p>Each refueling as describe in the company Operation Manuel</p>
<p>Check that filter systems are in place and date of last element replacement.</p>	<p><input type="checkbox"/> Always <input checked="" type="checkbox"/> Sometimes <input type="checkbox"/> Never</p>	<p>At the beginning of each contract</p>
<p>Check that a sample is clear and bright downstream of the filter.</p>	<p><input type="checkbox"/> Always <input checked="" type="checkbox"/> Sometimes <input type="checkbox"/> Never</p>	<p>When there is doubt on the fuel quality</p>
<p>Request or conduct a water test with paste or syringe and capsules.</p>	<p><input type="checkbox"/> Always <input checked="" type="checkbox"/> Sometimes <input type="checkbox"/> Never</p>	<p>When there is doubt on the fuel quality</p>
<p>Check that a sample from the low point of the tank is clear bright and free of water. If there is no low point water</p>	<p><input type="checkbox"/> Always <input checked="" type="checkbox"/> Sometimes</p>	<p>When there is doubt on the fuel quality</p>

	drain, do a dip of the tank using water paste.	<input type="checkbox"/> Never	
<b>Fuel Quality Control - Drums</b>	When using drummed fuel are there procedures in place to ensure the following requirements?		
	Verify the expiry date of the drums.	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	Made by pilots and crew leader on site as describe in the company Operation Manuel
	A "go no-go" filter be used for all refueling from drums.	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	Installed on all pumps as describe in the company Operation Manuel
	All drum fuel is visually checked for clarity and color and water tested with paste or fuel syringe and capsules before use.	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	Each time before refueling as describe in the company Operation Manuel
	Only clearly branded drums with both seals intact are be used unless the pilot knows the "history" of the drum since the seals were broken and retests the fuel for contamination before use.	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	Each time before refueling as describe in the company Operation Manuel

“SAFETY IN THE AIR BEGINS ON THE GROUND.”

	<p>Aircraft sump drains be checked before the first flight of the day and after each refueling.</p>	<p><input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never</p>	<p>Yes, as describe in the company Operation Manuel</p>
	<p>Drums are stored on their sides, clear of the ground with bungs horizontal in an area not subject to flooding. Under-cover storage should be considered if drum stock are to be kept for a long time.</p>	<p><input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never</p>	<p>Yes, as describe in the company Operation Manuel</p>
	<p>When not in use, fuel pumps are protected from water and other contamination.</p>	<p><input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never</p>	<p>Yes, as describe in the company Operation Manuel pump is always placed in a protection case</p>
	<p>Bungs should be sealed and the drum placed on its side for short term storage (i.e. overnight) of a partially filled drum.</p>	<p><input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never</p>	<p>Yes, as describe in the company Operation Manuel</p>

<b>Night Surveys</b>	<p>Typically, survey flights are conducted at low heights in day VMC, but if the low height is removed coupled with a smooth air requirement, such as for gravity surveys, it may be desirable to conduct night flights. Such flights can be conducted safely as long as there are adequate procedures to prevent a "controlled flight into terrain" CFIT accident.</p> <p>Are procedures in place to ensure the following requirements:</p>		
	<p>Are night surveys flown at least 1000 feet above all obstacles within the operational area and a 10 nautical mile buffer around the operational area? Does the operational area include the maneuvering area for line turns and lead-ins?</p>	<p><input type="checkbox"/> Always  <input type="checkbox"/> Sometimes  <input type="checkbox"/> Never  <input checked="" type="checkbox"/> N/A</p>	
	<p>Is a VMC reconnaissance flight performed in each block?</p>	<p><input type="checkbox"/> Always  <input type="checkbox"/> Sometimes  <input type="checkbox"/> Never  <input checked="" type="checkbox"/> N/A</p>	
<b>Monitoring of radios</b>	<p>During survey flights, are radios and transponders turned on and selected to the appropriate ATC or flight service frequencies.</p>	<p><input checked="" type="checkbox"/> Always  <input type="checkbox"/> Sometimes  <input type="checkbox"/> Never</p>	<p>Transponders are turned off but radio stay on at all time and communications are done at the end of the lines.</p>

	Additionally, equipment permitting, common air to air and emergency frequencies (121.5MHz) should also be monitored.		
<b>Turning Radius</b>	During straight and level flight there may be a significant margin above the stall speed, however in a steep turn the stall speed may be reached quickly with little warning and a stall in the turn at low level will likely result in a fatal accident.		
	Are all turns at low level limited to a maximum angle of bank of 30 degrees and be done at a constant altitude. Are climbs or descents allowed to be carried out during the turn?	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	Climbs or descents are permitted during the turns depending on the terrain out of the lines. Pilots are incited to follow terrain at the survey height and low level turn at high angle prohibited in the company operation manual
<b>Towed Geophysical Arrays</b>			
<b>Towed Geophysical Arrays – All aircraft types</b>	This section applies to all airborne surveys utilizing geophysical arrays suspended below and/or towed by rotary or fixed wing aircraft.		
	Do you operate towed geophysical arrays?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	Does the towed array have an STC/LSTC, engineering order or other similar certificate or statement describing array	<input type="checkbox"/> Yes <input type="checkbox"/> No	

	specifications and flight test data?	<input checked="" type="checkbox"/> N/A	
	Is there an Operating Manual for each array?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
	Does the Operating manual identify the maximum safe operating airspeed for the array?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
	Does the Operating Manual contain a parts list and maintenance manual containing the critical design specification for all parts and elements of the array?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
	Does the Operations Manual contain a pre-flight checklist?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	



	Does the Operations Manual contain a schedule for routine preventative maintenance, recorded inspections and testing?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
	Is there a procedure in place to ensure that all required maintenance, inspections and testing are up to date prior to job start?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
	Is all maintenance performed by a qualified person endorsed by the manufacturer or operator?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
<b>Towed Geophysical Arrays – Rotary Wing Aircraft</b>	Has the cable weight and length been determined by an aeronautical engineer as to minimize the potential for cable recoil into main and tail rotors following the loss of load?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
	Is there a weak link incorporated into the load bearing cable?	<input type="checkbox"/> Yes <input type="checkbox"/> No	

		<input checked="" type="checkbox"/> N/A	
	Is the weak link located as close as possible to the attachment hook of the helicopter?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
	Has the breaking strain of the weak link been specified by an aeronautical engineer?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
	Is the maximum towed array airspeed and VNE (Velocity Never Exceed) placard placed on the aircraft instrument panel in the Pilot's view?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
	Does the cargo hook arrangement allow the pilot to jettison the load without removing his/her hands from the flight controls? Do procedures include the requirement to test the	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

	helicopter cargo hook release mechanism?		
<b>Towed Geophysical Arrays – Fixed Wing</b>	Is the aircraft fitted with a shearing mechanism which can cut the tow cable when the array needs to be jettisoned?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
	Does the tow cable have a breaking strain which minimizes damage to the aircraft in the event the array snagged with ground objects?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
<b>Geophysical Survey Flight Training</b>			
<b>Training and Experience – All Operations</b>	Does your training program contain a syllabus for low level geophysical flight training?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	See Exact air MANOP for details
	Does the Pilot training syllabus reflect the IAGSA training guidelines?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Training is usually done by an experienced pilot which will confirm the go-ahead to the trainee pilot only when he is ready
	Are there documented criteria to assess Pilot competency?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Detailed training reports and PPC or VCP reports.

“SAFETY IN THE AIR BEGINS ON THE GROUND.”

<b>Simulator Training</b>	In addition to the training in the actual aircraft, do pilots, where practical, undergo simulator training in a type specific simulator representing the aircraft being flown on survey? If so, at what frequency?	<input type="checkbox"/> Always <input checked="" type="checkbox"/> Sometimes <input type="checkbox"/> Never <input type="checkbox"/> N/A	If required, some simulator hours are done on a similar type of the aircraft used.
<b>Overwater and Offshore Surveys</b>			
<b>Minimum requirements for Over water and Off Shore Surveys</b>	The following recommendations apply to all overwater and off shore surveys flown in both fixed wing and rotary wing aircraft.		
<b>Training – Overwater &amp; Offshore Surveys</b>	Is Underwater Escape Training completed within the preceding three years before undertaking the over water or offshore survey.	<input type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	N/A ,no surveys has been conduct offshore yet Exactair comments
	Are Ditching & Emergency Evacuation Procedures reviewed, crew members thoroughly briefed and simulated training to be conducted at the work site prior to the start of all over water or offshore work. This review should include a review of general emergency procedures that could	<input type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	N/A ,no surveys has been conduct offshore yet Exactair comments

	potentially lead to a ditching and a discussion on the significance of sea state/wave height on ditching.		
<b>Training - Off Shore Surveys</b>	In addition to the above items, the following are to be included in offshore training:		
	Does Initial Training consist of a minimum of 10 hours training conducted by a pilot who has a minimum of 100 hours Offshore experience?	<input type="checkbox"/> Yes <input type="checkbox"/> No	N/A ,no surveys has been conduct offshore yet Exactair comments
	Does Recurrent Training consist of a minimum of 5 hours training conducted annually by a pilot with the same qualifications as for the initial training: or prior to the start of an Offshore survey if pilot has completed the initial training but has not flown Offshore for more than 90 days?	<input type="checkbox"/> Yes <input type="checkbox"/> No	N/A ,no surveys has been conduct offshore yet Exactair comments
	Alternatively, the above experience requirements may be waived if the Operator has in place a competency based training program which includes Offshore operations.		N/A ,no surveys has been conduct offshore yet Exactair comments

<p><b>Type of Aircraft – Over water / Offshore Operations</b></p>	<p>For an over water/offshore survey in an area with harsh conditions where the odds of surviving a ditching or the exposure that would follow are low then the emphasis must be placed on choosing an aircraft that reduces the probability of a ditching. Whereas, the aircraft criteria may be somewhat less stringent in less harsh conditions where the odds of a successful ditching and rescue are good.</p>		
	<p>For any survey that is over water or offshore in an area where rescue is not likely to occur within an anticipated acceptable exposure time and/or where anticipated sea states would make a successful ditching unlikely, is the use of a multi engine aircraft with performance characteristics such that in the event of an engine failure during an over water survey it can climb from survey height to 500 feet and return to shore or during an offshore survey it can climb from survey height and maintain prolonged flight on the remaining engine(s) to return to a suitable airport at the minimum IFR altitude utilized?</p>	<p> <input checked="" type="checkbox"/> Always  <input type="checkbox"/> Sometimes  <input type="checkbox"/> Never         </p>	<p>We only operate multi engines aircraft able to fly back to the base after an engine failure.</p>

	Are single engine piston aircraft used for over water/offshore surveys?	<input type="checkbox"/> Always <input type="checkbox"/> Sometimes <input checked="" type="checkbox"/> Never	
<b>Aircraft equipment – Offshore</b>	Are aircraft equipped with at least the following gyroscopic instruments, each of which must be independent of the others: 2 x attitude indicator; 2 x heading indicator; 2 x turn and slip indicator or turn coordinator?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Aircraft are equipped to do IFR crew operation and are used in 703 charter operation between survey contracts.
	If a second pilot is to be part of the crew, is there a complete second set of basic flight instruments (attitude indicator, gyroscopic heading indicator, turn and slip or turn coordinator airspeed, altimeter, vertical speed) installed at the co-pilot's seating position?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Aircraft are equipped to do IFR crew operation and are used in 703 charter operation between survey contracts.
	Are there at least two (2) independent power sources to drive the gyroscopic instruments?		Aircraft are equipped to do IFR crew operation and are used in 703 charter operation between survey contracts.

	<p>- this may mean two vacuum pumps with all air driven gyroscopes or a mixture of air driven and electric gyroscopes provided loss of one power source leaves operational one set of three gyroscopic instruments (attitude, heading and turn rate indicators)</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	
	<p>Is there a radio or radar altimeter with a means of alerting the crew when height above the water falls below a minimum safety height selected by the crew? Is there a means of testing the alerting device prior to flight?</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Radar Alt can be tested on the ground and in flight during each flight</p>
	<p>Is there a minimum of one instantaneous vertical speed indicator (IVSI) to provide an instant alert of descent</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>.</p>
	<p>Do you require the use of weather radar where</p>	<p><input checked="" type="checkbox"/> Always</p>	<p>Radar or stormscope</p>



	thunderstorms are present or could be expected?	<input type="checkbox"/> Sometimes <input type="checkbox"/> Never	
	Are Rotary wing aircraft equipped with floatation aids such as "pop-outs floats"?	<input type="checkbox"/> Always <input checked="" type="checkbox"/> Sometimes <input type="checkbox"/> Never	When operations overwater at low altitude requires
<b>Emergency Equipment – Offshore Surveys</b>	An upper torso restraint system, with a preference for a four point harness, for each crew member	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Aircraft are equipped to do IFR crew operation and are used in 703 charter operation between survey contracts.
	Are aircraft equipped with a 406 MHZ ELT?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Automatic ELT fixed in the tail on each plane used for survey
	Is the crew provided a covered life raft with a self erecting canopy that is equipped with a 406 MHZ ELT and normal emergency survival equipment? Does raft should include an inflatable floor for cold water operations?	<input type="checkbox"/> Yes <input type="checkbox"/> No	n/a
	Are constant wear dual chamber life vests that contain		n/a

“SAFETY IN THE AIR BEGINS ON THE GROUND.”

	an ELT aELT/EPIRB, flares and a signal mirror, worn by each crew member?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	Are immersion/exposure suits worn if water and air temperatures warrant?	<input type="checkbox"/> Yes <input type="checkbox"/> No	n/a
	Are all helmets and headsets fitted with double disconnect cords?	<input type="checkbox"/> Yes <input type="checkbox"/> No	n/a
<b>Weather – Offshore Surveys</b>	Are Offshore survey flights conducted under VMC with minimums of 5 miles visibility and 1000 foot ceiling in the survey area?	<input type="checkbox"/> Yes <input type="checkbox"/> No	n/a
	Is a thorough weather briefing solicited (if available) and does it should include sea state/wave height and wind maximums in the survey area?	<input type="checkbox"/> Yes <input type="checkbox"/> No	n/a
<b>Additional Training Requirements</b>			
Fire Extinguisher Training	Do all crew members on survey flights, including equipment operators, receive annual training in the use of	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Pilots receive it with Exact air annual training and they transmit it to operators.

	fire extinguishers in fighting in flight fires?		
Survey Crew Resource Management Training	Is Survey Crew Resource Management training provided to all crew members assigned to survey operations including: geophysicists; pilots; equipment operators; maintenance engineers; field technicians and field support staff at intervals not exceeding three years?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	See Exact air MANOP
<b>Flight Performance Monitoring</b>			
Performance Monitoring	Is performance parameters, including aircraft speed, height above terrain and drape, periodically reviewed using data collected during surveys?	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	Speed, height and drape are part of standard daily data QC.
	Is the frequency of review such that any discrepancies on a particular survey or by a particular pilot can be identified as early as possible?	<input checked="" type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never	Crew members are advised before the next flight, if there is any discrepancy